

# **As-of-Right Zoning Bylaw for Middlefield: Allowing Use of Large-Scale Ground-Mounted Solar Photovoltaic Installations**

## **7.0 Definitions**

**Site Plan Review:** A review of a proposed project to ensure that it is in conformity with a zoning bylaw's requirements. The Planning Board will serve as the Site Plan Review Authority where a site plan review is within the text of a particular bylaw.

**Building Inspector:** The inspector of buildings/building commissioner as defined by the Mass. State Building Code.

**Building Permit:** A construction permit issued by an authorized building inspector; the building permit evidences that the project is consistent with the Massachusetts State Building Code as well as local zoning bylaws, including those governing ground-mounted large-scale solar photovoltaic installations.

**Large-Scale Ground-Mounted Solar Photovoltaic Installation:** A solar photovoltaic system that is structurally mounted on the ground and is not roof-mounted, and has a minimum nameplate capacity of 250 kW DC. Included are appurtenant or accessory structures and buildings.

**On-Site Solar Photovoltaic Installation:** A solar photovoltaic installation that is constructed at a location where other uses of the underlying property occur.

**Prime Agricultural Soil:** Land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops as identified by the U.S. Department of Agriculture, Natural Resources Conservation Service Soil Survey Classification.

**Rated Nameplate Capacity:** The maximum rated output of electric power production of the Photovoltaic system in Direct Current (DC).

**Solar Photovoltaic Array:** an arrangement of solar photovoltaic panels.

**Zoning Enforcement Authority:** The Zoning Enforcement Officer/Building Inspector

## **4.9 Large-Scale Ground-Mounted Solar Photovoltaic Installations**

### **4.9.1 Purpose**

The purpose of this bylaw is to promote the creation of new large-scale ground-mounted solar photovoltaic installations on municipally owned property by providing standards for the placement, design, construction, operation, monitoring, modification and removal of such

installations that address public safety, minimize impacts on scenic, natural and historic resources and to provide adequate financial assurance for the eventual decommissioning of such installations.

The provisions set forth in this section shall apply to the construction, operation, removal, alteration and/or repair of large-scale ground-mounted solar photovoltaic installations.

#### **4.9.1.1 Applicability**

This section applies to large-scale ground-mounted solar photovoltaic installations proposed to be constructed after the effective date of this section. This section also pertains to physical modifications that materially alter the type, configuration, or size of these installations or related equipment, structures and buildings.

### **4.9.2 Site Plan Review**

Ground-mounted large-scale solar photovoltaic installations shall undergo site plan review by the Middlefield Planning Board prior to construction, installation or modification as provided in this section.

#### **4.9.2.1 General**

All plans and maps shall be prepared, stamped and signed by a Professional Engineer licensed to practice in Massachusetts.

#### **4.9.2.2 Required Documents**

Pursuant to the site plan review process, the project proponent shall provide the following documents:

##### **4.9.2.2.1 A site plan showing:**

- (a) Property lines and physical features, including roads, lot area, setbacks, open space, parking and structure coverage for the project site;
- (b) Proposed changes to the landscape of the site, grading, vegetation clearing and planting, exterior lighting, screening vegetation or structures;
- (c) Plans of the solar photovoltaic installation and appurtenant structures signed by a Professional Engineer licensed to practice in the Commonwealth of Massachusetts showing the proposed layout of the system, lighting, signage, utility connections, transformers and any potential shading from nearby structures or natural features and vegetation;
- (d) One or three line electrical diagram detailing the solar photovoltaic installation, associated components, and electrical interconnection methods, with all National Electrical Code compliant disconnects and overcurrent devices.
- (e) Documentation by means of manufactures' specifications of the major system components to be used, including, but not limited to the PV panels, mounting system, and inverter(s);
- (f) Name, address, license verification and contact information for proposed system installer(s);
- (g) Name, address, phone number and signature of the project proponent, co-proponents, if any ;
- (h) The name, contact information and signature of any agents representing the

project proponent; and

4.9.2.3 Documentation of actual or prospective access and control of the project site (see also Section 4.9.3.1);

4.9.2.4 An operation and maintenance plan (see also Section 4.9.3.2);

4.9.2.5 Zoning district designation for the parcel(s) of land comprising the project site (submission of a copy of a zoning map with the parcel(s) identified is suitable for this purpose);

4.9.2.6 Proof of liability insurance; and Description of acceptable financial surety. (see also Section 4.11 )

The Planning Board may waive documentary requirements as it deems appropriate.

### **4.9.3 General Requirements for all Large Scale Solar Photovoltaic Installations**

The following requirements are common to all solar photovoltaic installations.

#### **4.9.3.1 Site Control**

The project proponent shall submit documentation of actual or prospective access and control of the project site sufficient to allow for construction and operation of the proposed solar photovoltaic installation.

#### **4.9.3.2 Operation & Maintenance Plan**

The project proponent shall submit a plan for the operation and maintenance of the large- scale ground-mounted solar-photovoltaic installation, which shall include measures for maintaining safe access to the installation, storm water controls, and general procedures for maintenance of the installation.

#### **4.9.3.3 Compliance with Laws, Ordinances and Regulations**

The construction and operation of all large scale solar photovoltaic installations shall be consistent with all applicable local, state and federal requirements, including but not limited to all applicable safety, construction, electrical, environmental and communications requirements. All buildings forming part of a solar photovoltaic installation shall be constructed in accordance with the State Building Code.

#### **4.9.3.4 Building Permit and Building Inspection**

No large scale solar photovoltaic installation shall be constructed, installed, modified or removed without first obtaining a building permit.

#### **4.9.3.5 Fees**

Building permits issued for the construction, alteration, enlargement or demolition of large-scale solar photovoltaic installations shall be subject to permit fees, as

established by the Town of Middlefield. No building permit shall be deemed valid until such fee is paid.

#### **4.9.3.6 Utility Notification**

No large-scale ground-mounted solar photovoltaic installation shall be constructed until evidence has been given to the Building Inspector that the utility company operating the electrical grid where the installation is to be located has been informed of the solar photovoltaic installation owner or operator's intent to install an interconnected customer-owned generator. Off-grid systems shall be exempt from this requirement.

#### **4.9.3.7 Dimension and Density Requirements**

**4.9.3.7.1** For large-scale ground-mounted solar photovoltaic installations, front, side and rear setbacks shall be as follows:

- a. Front yard: The front yard depth shall be at least 40 feet; provided, however, that where the lot abuts a Conservation-Recreation or Residential district, the front yard shall not be less than 50 feet.
- b. Side yard: Each side yard shall have a depth at least 40 feet; provided, however, that where the lot abuts a Conservation-Recreation or Residential district, the side yard shall not be less than 50 feet on the side abutting a Conservation-Recreation or Residential property.
- c. Rear yard. The rear yard depth shall be at least 40 feet; provided, however, that where the lot abuts a Conservation-Recreation or Residential district on any boundary, the rear yard shall not be less than 50 feet.
- d. Access roads or driveways shall be set back at least 25 feet from side and rear lot lines.

#### **4.9.3.8 Segmentation**

In determining whether a project complies with the lot size restriction in section 4.9.3.10, the developer and the Site Plan Review Authority shall consider the entirety of the development, including:

(a) Any likely future expansion of the project on the subject property or on any property which is contiguous to the subject property or under related ownership;

(b) Any past, related development on any property which is contiguous to the subject property or any property that is under related ownership with the subject property at the time that this bylaw was adopted. A developer may not phase or segment a project or transfer ownership of contiguous properties to evade, defer, or curtail the requirements set forth in this bylaw.

#### **4.9.3.9 Appurtenant Structures**

All appurtenant structures to large-scale ground mounted solar photovoltaic installations shall comply with the Town of Middlefield Zoning By-Law and specifically the requirements of this section, and the Massachusetts State Building Code. All appurtenant structures shall be shaded from view from public ways and

neighboring properties. Said shading shall be accomplished with vegetation, which shall be of varieties indigenous to Middlefield, and approved by the Planning Board during site plan review. Said vegetative screening shall reach a mature form to effectively screen the installation within five years of installation. Planting of the vegetative screening shall be completed prior to final approval of the photovoltaic installation by the Building Commissioner.

#### **4.9.3.10 Size**

Large scale ground mounted solar photovoltaic installation, as defined in this section, shall not exceed five acres, in aggregate of all arrays, structures and buildings.

### **4.9.4. Design Standards**

#### **4.9.4.1 Lighting**

Lighting of large-scale photovoltaic installations and appurtenant structures and buildings shall be limited to that required for safety and operational purposes, and shall be reasonably shielded from abutting properties. Where feasible, lighting of the solar photovoltaic installation shall be directed downward and shall incorporate full cut-off fixtures to reduce light pollution.

#### **4.9.4.2 Signage**

Signs on large- scale ground-mounted solar photovoltaic installations shall comply with the Town of Middlefield sign bylaw. A sign shall be required to identify the owner and provide a 24-hour emergency contact phone number.

Solar photovoltaic installations shall not be used for displaying any advertising except for reasonable identification of the manufacturer, owner and/or operator of the solar photovoltaic installation.

#### **4.9.4.3 Utility Connections**

Reasonable efforts, as determined by the Planning Board during site plan review, shall be made to place all utility connections from the solar photovoltaic installation underground, depending on appropriate soil conditions, shape, and topography of the site and any requirements of the utility provider. Any connection components may be located above ground if required by the utility provider.

#### **4.9.4.4 Screening & Landscaping**

The solar installation shall be screened from view of the street and neighboring parcels, in order to protect the rural character of the town.(see also section 4.9.5.4 )

#### **4.9.4.5 Height**

No component of a solar installation shall exceed 15 feet from the mean grade of the site at the location of the installation to its highest point above said mean grade.

### **4.9.5 Safety and Environmental Standards**

#### **4.9.5.1 Location**

No large-scale ground-mounted solar array shall be installed on Prime Agricultural Soil. A map depicting the location of such soils accompanies this bylaw.

#### **4.9.5.2 Emergency Services**

The large-scale solar photovoltaic installation owner or operator shall provide a copy of the project summary, electrical schematic, and site plan to the local fire chief. Upon request the owner or operator shall cooperate with local emergency services in developing an emergency response plan. All means of shutting down the solar photovoltaic installation shall be clearly marked. The owner or operator shall identify a responsible person for public inquiries throughout the life of the installation. Twenty-four hour access to the site shall be provided to the fire department and police department by means approved by the chief of police and fire chief.

#### **4.9.5.3 Land Clearing, Soil Erosion and Habitat Impacts**

Clearing of natural vegetation shall be limited to what is necessary for the construction, operation and maintenance of the large-scale ground-mounted solar photovoltaic installation or otherwise prescribed by applicable laws, regulations, and bylaws. Solar photovoltaic systems shall be installed on water permeable surfaces, as approved by the planning board during site plan review.

#### **4.9.5.4 Landscape Maintenance**

When possible, a diversity of plant species shall be used, with a preference for species native to New England. Use of exotic plants, as identified by the most recent copy of the "Massachusetts Prohibited Plant List" maintained by the Massachusetts Department of Agricultural Resources, is prohibited. Herbicides shall only be applied by properly licensed personnel, as enforced by the Massachusetts Department of Agricultural Resources.

### **4.9.6 Monitoring and Maintenance**

#### **4.9.6.1 Solar Photovoltaic Installation Conditions**

The large-scale ground-mounted solar photovoltaic installation owner shall be responsible for maintenance of the facility. Maintenance shall include, but not be limited to, painting, structural repairs, and integrity of security measures. The owner shall be responsible for the cost of maintaining the solar photovoltaic installation and any access road(s), unless accepted as a public way.

#### **4.9.6.2 Modifications**

All substantial modifications to a large-scale solar photovoltaic installation made after final inspection by the building inspector shall require approval by the Planning Board prior to the issuance of a building permit for said modifications. Determination of the need for this review shall be at the discretion of the building

inspector.

#### **4.10 Abandonment or Decommissioning**

##### **4.10.1 Abandonment**

Absent notice of a proposed date of decommissioning or written notice of extenuating circumstances, the solar photovoltaic installation shall be considered abandoned when it fails to operate for more than one year without the written consent of the Planning Board. If the owner of the large- scale ground-mounted solar photovoltaic installation fails to remove the installation in accordance with the requirements of this section within 150 days of abandonment or the proposed date of decommissioning, the building inspector or his designee may enter the property and physically remove the installation.

##### **4.10.2 Removal Requirements**

The owner shall notify the Planning Board by Certified Mail of the proposed date of discontinued operations and plans for removal. Decommissioning shall consist of:

Removal of all large-scale ground-mounted solar photovoltaic installations, structures, equipment, security barriers and transmission lines from the site.

Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations.

Stabilization or re-vegetation of the site as necessary to minimize erosion. The Planning Board may allow the owner or operator to leave landscaping or designated below-grade foundations in order to minimize erosion and disruption to vegetation.

#### **4.11 Financial Surety**

Proponents of large-scale ground-mounted solar photovoltaic projects shall provide a form of surety, either through escrow account, bond or otherwise, to cover the cost of removal in the event the town must remove the installation and remediate the landscape, in an amount and form determined to be reasonable by the Planning Board, but in no event to exceed more than 125 percent of the cost of removal and compliance with the additional requirements set forth herein, as determined by the project proponent. Such surety will not be required for municipally- or state-owned facilities. The project proponent shall submit a fully inclusive estimate of the costs associated with removal, prepared by a qualified engineer during site plan review stage of application. The amount shall include a mechanism for calculating increased removal costs due to inflation.

